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TRANSLATION  
ITALIAN IMT22100**MINISTRY OF INDUSTRY COMMERCE AND HANDICRAFT****D.G.P.I – ITALIAN PATENT AND BRANDS OFFICE****INDUSTRIAL INVENTION PATENT****N. 01250630**

This patent has been issued for the invention mentioned in the application below:

Application number	Year	U.P.I.C.A	Date of patent	Classification
001846	91	MILAN	04/07/1991	B-01F

OWNER

TECMEC S.r.l.  
ALBAIRATE (MILAN)

REPRESENTATIVE

FRANCO CICOGLA

ADDRESS

Prof. FRANCO CICOGLA  
VIA VISCONTI DI MODRONE 14/A  
20100 MILAN

TITLE

PAINT SHAKER / MIXER WITH SAFETY GUARDS

INVENTOR

CARLO DESINANO

(Stamps and seal)

Rome, 21 April 1995

Delivered by the Director or  
Acting Director of UPICA\* in  
Milan

22 May 1995

DIRECTOR  
Signed (GIOVANNA MORELLI)

Signed

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\* UPICA: Ufficio Provinciale dell'Industria Commercio e Artigianato (Provincial Office for Industry, Commerce and Handicrafts).

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ITALIAN IMT22100TO THE MINISTRY OF INDUSTRY COMMERCE AND HANDICRAFT  
CENTRAL PATENT OFFICE (U.C.B.)  
APPLICATION FOR A PATENT FOR AN INDUSTRIAL INVENTION

FORM A

## A. APPLICANT (1)

N.B.  
SP

1) Name	TECMEC S.r.l.			Code	
Resident	ALBAIRANTE (MILANO)			Code	
2) Name				Code	
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## B. REPRESENTATIVE OF THE APPLICANT AT THE U.C.B.

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## C. APPLICANT'S CHOSEN ADDRESS

STREET

D. TITLE Proposed class  
"PAINT SHAKER / MIXER WITH SAFETY GUARDS"

## E. NOMINATED INVENTORS

	SURNAME AND NAME		SURNAME AND NAME
1)	DESINANO CARLO	3)	
2)		4)	

## F. PRIORITY

Illegible or Organization	Type of priority	Application no.	Date deposited	Attachment
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1)				
2)				

## G. APPROVED CENTRE FOR THE COLLECTION OF CULTURES OF MICRO-ORGANISMS

## H. SPECIAL REMARKS

## ATTACHED DOCUMENTS

Doc	No of copies	DESCRIPTION	Page no.	
Doc 1)	2	DESCRIPTION	11	Summary and main drawing, description and claims (obligatory)
Doc 2)	2	DESCRIPTION	05	Drawing (obligatory if mentioned in the description, 2 copies)
Doc 3)	1	CLAIMS		Accompanying letter
Doc 4)	0	CLAIMS		Nominated inventor
Doc 5)	0	CLAIMS		Priority documents with Italian translation
Doc 6)	0	CLAIMS		Authorization or act of transfer
Doc 7)	0	CLAIMS		Full name of applicant

8) Proof of payment in lire

401,000.- FOR 3 YEARS

9) Patent stamp duty in lire

10,000

TODAY'S DATE 04/07/1991

APPLICANT'S SIGNATURE(s)

CONTINUED YES/NO NO

IS AN AUTHENTICATED COPY OF THIS APPLICATION REQUIRED? YES

PROVINCIAL INDUSTRY COMMERCE AND HANDICRAFT OFFICE MILANO Code 15

## APPLICATION STATEMENT

APPLICATION NO.

?? 191 A 001846

Year NINETEEN NINETY ONE Day FOUR month July

The above-mentioned applicant(s) has submitted and signed this application with 60 Attachments for the above-mentioned patent

## 1. Remarks of the issuing office

Applicant

Issuing Officer G.RESCALI

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Description of the industrial invention called:

"PAINT SHAKER / MIXER WITH SAFETY GUARDS"

5 By

TECMEC SRL

An Italian company with its head quarters at Albairate, Milan, resident at Ufficio  
10 Brevetti Dott. Proff. Franco Cicogna in Milan, Via Visconti di Modrone 14/A

Deposited on the (date)

at No.

#### DESCRIPTION

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This invention consists of a paint shaker / mixer with safety guards.

Paint shaker / mixers already on the market, normally used in bodywork and other  
similar situations, consist of a main structure with several shelves on which the  
20 paint containers are placed. The paint containers are usually fitted with a cover  
attached to an external clamping screw which is connected to motors that shake  
and mix the paint contained within the containers.

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The clamping screw is inserted into the shaker and connects to the flap, which is itself connected to a motor that can be rotated as required. When the flap is set in motion, it rotates the clamping screw and, consequently, the mixing rod within the container.

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In these types of machines, the area where the flap connects to the clamping screw is not adequately protected. Therefore, the user may, inadvertently, place a finger, or any other part of the body for that matter, between the flap and the clamping screw, with very serious consequences.

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Another inconvenience with the above mentioned type of machines is that loading and unloading the paint containers often proves awkward. This may result in an incorrect connection between the flap and the clamping screw.

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The purpose of this invention is to eliminate the above mentioned inconvenience by constructing a paint shaker / mixer with safety guards which adequately protects the area where the flap connects to the clamping screw, so that the user can [not] place a hand, either accidentally or voluntarily, in the area when the motor is in motion.

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Specifically, the paint shaker / mixer with safety guards in question can easily be constructed using materials that are widely available on the market. This makes it very competitive, from an economic standpoint.

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The above-mentioned objectives, which will be further expounded later, are achieved using a paint shaker / mixer with safety guards, as described in this invention, which consists of a main structure with several shelves on which the containers are placed.

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These containers are fitted with a clamping screw connected to motors situated in tubes within the framework, where the flaps that rotate the clamping screw are situated.

- 10 Each tube of the above-mentioned paint shaker / mixer is fitted with a safety guard which can be placed over the entrance to the tube.

It is also fitted with motors that serve the dual function of setting the flaps in motion and enabling the safety guard.

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Additional features and advantages of this invention will become evident in the descriptions of the various but not exclusive operating modes of the paint shaker / mixer with safety guards, which is shown in the attached drawings for illustrative purposes only where:

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Figure 1 shows a view of the main structure of the shaker;

Figure 2 shows a frontal view of the shaker, with the safety guard in the open position, to allow for loading or unloading of the container.

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Figure 3 shows a frontal view of the shaker, with the safety guard in the closed position, preventing access to the area where the flap and the clamping screw are connected;

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Figure 4 shows a cross section of the safety guard in the open position;

Figure 5 shows a cross section of the safety guard in the closed position;

10 Figure 6 shows a close up of a tube, with the safety guard in the open position.

Figure 7 shows the lever for enabling the safety guard.

15 Figure 8 shows the lever for enabling the safety guard together with the micro switch.

In reference to the numbers in the figures, the structure of the paint shaker / mixer with safety guards in this invention, consist of a main structure (1), with several shelves (2), on which the paint containers (3) are placed. The paint containers are  
20 fitted with a cover attached to an external clamping screw (4) which, in turn, is connected to the motor that shakes the paint contained within the containers.

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The clamping screw (4) can be inserted into the tube (10) fitted with several openings (11) for the clamping screw (4) to enter the tubes containing the flaps (12) which, when hooked up to the clamping screw (4), set the system in motion.

- 5 What sets this shaker apart from other shakers is the fact that the tubes are fitted with a hinged, safety guard (20), which rotates in a cavity (21), above the openings (11), so that when the guards (20) are in the closed position, they remain between the flap (12) and the clamping screw (3).
- 10 The guards (20) are activated by the connecting bracket (30), which have a slot (31) which fits around a transversal fulcrum (32) coming out from the safety guard (20).

- The brackets (30) are attached to mobile rods (33) which move them to a higher  
15 position, (figure 4), to hold the safety guards (20) This may be either in the up position, thus allowing access to the openings (11), or in the down position, thus closing the openings (11).

- The mobile rods (33) are set in motion by a lever (35) which is accessible from the  
20 front of the shaker and whose function is to activate all the safety guards.

This is why there is a feeler pin (40) on the mobile rods (33) which, when the safety guards are in the closed position, comes into contact with a micro switch (41), which sets off the motors. On the other hand, if the feeler pin (40) is not in



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contact with the micro switch (41), the motor will not start. Therefore, when the safety guards are in the open position, the motors cannot be activated. This guarantees safety.

- 5 The above description shows how this invention achieves its purpose.

Of particular note is the way that the safety guards, which hover around the openings to the various tubes containing the flaps, allow you to close the openings to the tubes completely, thus ensuring that when the shaker is in action, access to  
10 the area where the flap connects to the clamping screw is prevented.

This invention is open to several variations, all of which fall into the same concept of the invention itself.

- 15 Furthermore, any material can be substituted with any other material of a similar nature.

Indeed, provided the materials used are appropriate for their specific use in terms of size and shape, they may be of any nature.

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## CLAIMS

1. A paint shaker / mixer with safety guards, featuring a main structure with several shelves on which the paint containers are placed. The paint  
5 containers are fitted with a cover attached to an external clamping screw which, in turn, is connected to motors that shake and mix the paint within the containers. The motors are lodged in tubes within the main structure of the shaker and are fitted with flaps that rotate the clamping screws. The main characteristic of this system is that each tube is fitted with a movable,  
10 safety guard placed above the opening where the clamping screws enter the tubes. The motors within these tubes which activate the flaps are also responsible for moving the safety guards to their appropriate position.
2. A paint shaker / mixer, as described in the previous claim, featuring  
15 openings which facilitate the entry of the clamping screw.
3. A paint shaker / mixer, as described in one or more of the previous claims, featuring a row of hinged, safety guards placed along a shaft, above the openings to the tubes.  
20
4. A paint shaker / mixer, as described in one or more of the previous claims, featuring hinged, safety guards lodged in mobile cavities, the activation of which puts the safety guards into position.

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5. A paint shaker / mixer, as described in one or more of the previous claims, featuring mobile shafts which are activated by a lever. When these shafts are in the up position, they hold the safety guard in an open position; when they are in the down position, they hold the safety guards in a closed position.
- 5
6. A paint shaker / mixer, as described in one or more of the previous claims, featuring a feeler pin at the end of the mobile shafts which, when in contact with a micro switch, sets off the motor. The purpose of the micro switch is to prevent the activation of the motors when the shafts are in the up position which would mean that the safety shields were in their open position.
- 10
7. A paint shaker / mixer with safety guards, as described in the previous claims, with special features, as earlier described and illustrated, for the purposes specified.
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